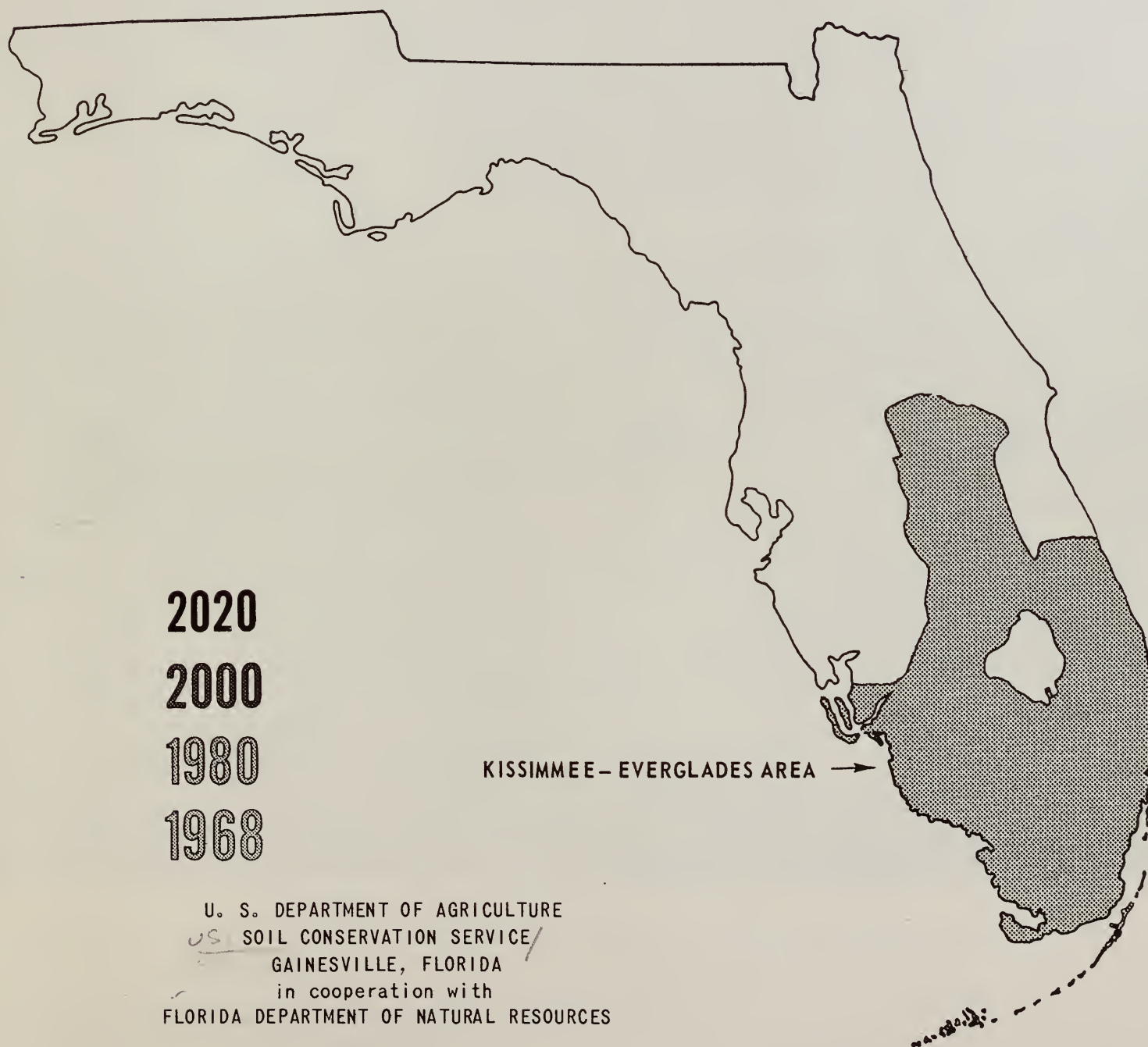


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Florida Land and Water Resources Study in the KISSIMMEE-EVERGLADES AREA



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ACKNOWLEDGEMENT

Some of the pictures appear in this publication through the courtesy of
Central & Southern Florida
Flood Control District
Florida Department of Commerce
Soil Conservation Service

20,249

FOREWORD

The U. S. Department of Agriculture has been engaged in river basin studies for three decades. In recent years, however, the Department of Agriculture has been given additional responsibilities in the development of cooperative river basin plans.

This pamphlet is intended to describe briefly the role of the U. S. Department of Agriculture, The Florida Department of Natural Resources, and other agencies in the development of a soil and water resource plan for the State.

It outlines briefly the material that can be found in more detail in the main reports of the U. S. Department of Agriculture and the Florida Department of Natural Resources. Additional information not shown in the main reports or appendix, may be obtained from the supporting data files located in the Soil Conservation Service, River Basin Office in Gainesville, Florida, and the Department of Natural Resources file in Tallahassee, Florida.

Information in these reports should be helpful to all local, state, and federal planning organizations in developing a well coordinated state soil and water resource plan.

SPONSOR

FLORIDA DEPARTMENT OF NATURAL RESOURCES
Randolph Hodges, Director

FIELD ADVISORY COMMITTEE

U. S. DEPARTMENT OF AGRICULTURE

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Soil Conservation Service

David Larson, U. S. Forest Service

Neil Cook, Economic Research Service

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CATALOGING - PREP.

This Report Prepared by Agencies of the U. S. Department of Agriculture: Soil Conservation Service, Forest Service, and Economic Research Service, and Florida Department of Natural Resources



THE FLORIDA EVERGLADES

INTRODUCTION

The Director of the Florida Department of Natural Resources requested the assistance of the United States Department of Agriculture in making investigations and preparing a companion report on the agricultural phases of the water and related land resources of the State. This information will serve as a basis for recommendations for planning and administering the physical aspects of development and management of these resources. It will serve as the input from agricultural interests for a state-wide soil and water resource plan. The Director of the Department of Natural Resources has the responsibility for coordinating the efforts of all agencies contributing to the study.

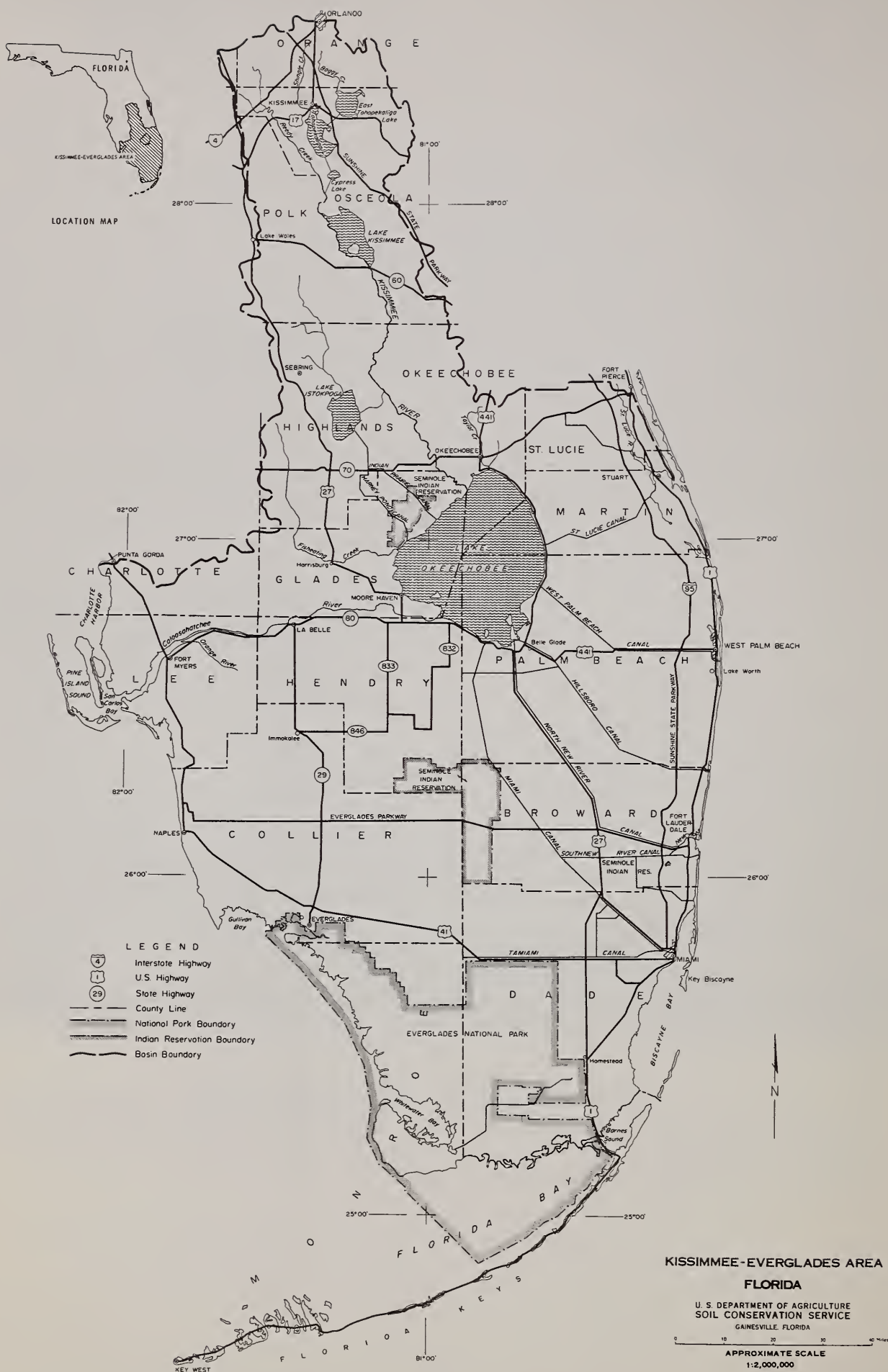
The U. S. Department of Agriculture is authorized to cooperate with the State under Section VI of Public Law 566 (River Basin Planning Section of the Small Watershed Act). The U.S.D.A. activities in the study are under the leadership of the U. S. Soil Conservation Service in cooperation with the Economic Research Service and the U.S. Forest Service.

The primary objective of the U.S.D.A. in participating in the study is to facilitate the coordinated and orderly conservation, development, utilization and management of the water and related land resources of the Basin. The main emphasis of the study involves the projected land and water resource needs of an expanding population, and the physical and economic aspects of flood prevention, drainage and irrigation, surface and subsurface water supplies, water quality control; fish and wildlife resources; environmental protection and enhancement, and other related matters.

The U.S.D.A. study consisted of inventorying the existing land use acreages of crops, pasture and forestland. Irrigated crops and pasture were located on county maps and their sources of water (surface or subsurface) were determined. Soils information was determined from general soils maps or from detailed soil surveys where available.

Agricultural acreages were estimated on the basis of population projections and in terms of the Basin's ability to maintain its proportionate share of State and National production of agricultural products.

The Department of Natural Resources inventoried and made projections of water use and needs for municipal and industrial purposes and for salinity control. Estimates of the amounts of ground water stored in the Basin's aquifers were based on geologic studies.



THE KISSIMMEE-EVERGLADES AREA

The Kissimmee-Everglades Area consists of the southern part of the peninsula of Florida including all of the Florida Keys. The northern boundary is formed by the divide between the Kissimmee River Basin and the St. Johns River Basin on the northeast and the Peace River Basin on the northwest. The Kissimmee River originates near Orlando and flows almost due south into Lake Okeechobee. The 17,664 square mile area includes all of the southern peninsula of Florida that was not included in either the Florida West Coast Tributaries Report or the St. Johns River Basin and Intervening Coastal Areas Report. The area is made up of 15,702 square miles of land and 1,962 square miles of water. The water area consists of 1,076 square miles of fresh water lakes and streams, and 886 square miles of salt or brackish estuaries and rivers.

All or parts of seventeen counties are within the boundaries of the Basin. For watershed planning purposes, the area was divided into 126 planning units ranging in size from 13 to 1,769 square miles. Lake Okeechobee with over 700 square miles of surface area is by far the largest lake in the Basin and is the second largest fresh water lake entirely within the United States.

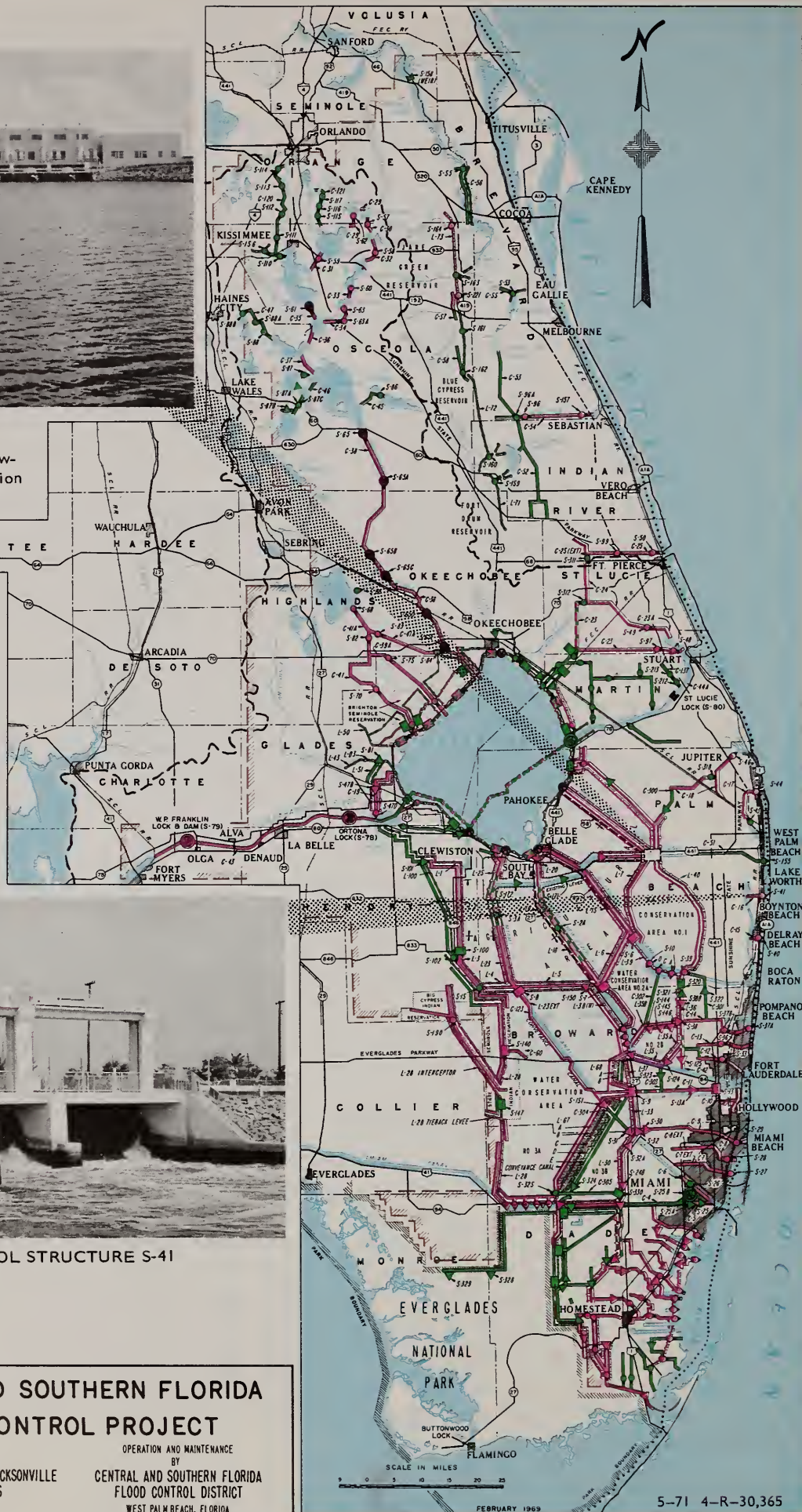
Rainfall over the Basin varies both seasonally and by location. Average rainfall varies from 40 inches at Key West to over 64 for an area along the lower east coast, with the average annual rainfall being about 52 inches per year. The Basin has vast quantities of fresh water available in both underground aquifers and in its lakes and streams. This water is not evenly distributed over the area and tends to vary in quality and quantity throughout the year.

The Basin consists mainly of low, nearly level plains. Approximately two-thirds of the area has an elevation of twenty feet or less. The highest natural ground elevation in the Basin is slightly over 300 feet, just south of Babson Park. The southwestern part of the Basin comprises the Everglades and is a unique area of low flat swamps interspersed with brackish streams and countless islands. A portion of this area has been set aside as a national park in order to preserve it in its natural state.

The geologic formations of the Basin are entirely sedimentary. The basal formations are thick, highly calcareous sediments of the Eocene Age. Successive periods of sedimentation and erosion during Oligocene, Miocene and Pliocene ages have left discontinuous strata of interbedded limestone, marl and unconsolidated sands and clays. The shallow aquifers of South Florida are made up of deposits of rocks and shells which yield large quantities of fresh water along the east coast, but tend to diminish in yield as you move westward. There are no natural barriers along the coast to prevent sea water intrusion if these shallow aquifers are drawn down excessively. This tends to limit the amount of fresh water that can be withdrawn from this area. Surface supplies of fresh water to form salt water barriers along the coast are very important to the ground water resources of the lower east coast.



S-5A
World's Largest Low-
level Pumping Station
(2,160,000 G.P.M.)



CONTROL STRUCTURE S-41

CENTRAL AND SOUTHERN FLORIDA FLOOD CONTROL PROJECT

DESIGN AND CONSTRUCTION
BY
U. S. ARMY ENGINEER DISTRICT, JACKSONVILLE
CORPS OF ENGINEERS
JACKSONVILLE, FLORIDA

OPERATION AND MAINTENANCE
BY
CENTRAL AND SOUTHERN FLORIDA
FLOOD CONTROL DISTRICT
WEST PALM BEACH, FLORIDA

Reproduced by USDA, Soil Conservation Service, Fort Worth, Texas from Corps of Engineers D.O. File No. 400-24,979.
USDA-SCS-FORT WORTH, TEX. 1971

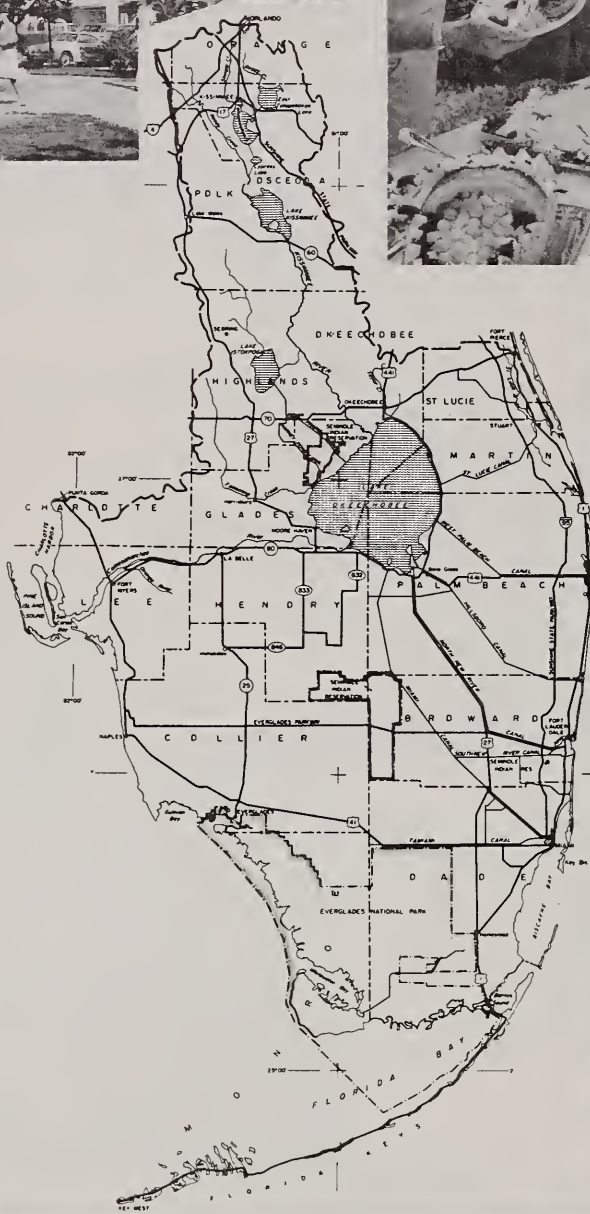
4-32082

CENTRAL AND SOUTHERN FLORIDA FLOOD CONTROL DISTRICT

Central and Southern Florida Flood Control District was created by an Act of the Florida State Legislature in 1949. This Act authorized the Flood Control District to cooperate with the U. S. Army Corps of Engineers in the operation and maintenance of project works after they were designed and constructed under the supervision of the Corps of Engineers. The Flood Control District is operating and maintaining a system in all or part of 18 counties involving 15,200 square miles. When complete, the District will have approximately 1,500 miles of canals and levees, eleven pumping stations and over one hundred water control structures. Three large conservation areas covering about 1,335 square miles and Lake Okeechobee embracing 742 square miles, have been diked for water storage and conservation.

The lake is regulated by opening and closing structures on various outlet canals to control the lake on a schedule of 15.5 to 17.5 MSL. The stored water is used to irrigate farmland, supply industrial and municipal water; create a salt water barrier along the lower east coast and supply the Everglades National Park. The system is providing flood control by conservation. Instead of channeling surplus flood waters into the Gulf of Mexico or the Atlantic Ocean, much of it is pumped into Lake Okeechobee or the conservation areas for future use in the distribution schedule.

The Flood Control Act of 1968 modifies the Central and Southern Florida Flood Control Project with the implementation of the Water Resources Plan for Central and Southern Florida. This new plan, which includes 16,000 square miles, has additional areas of the Everglades National Park and the balance of Monroe County and Collier County that were not in the Flood Control District. The modified plan makes provision to improve the supply, distribution and conservation of the water resources. The new revised lake regulation schedule from 19.5 to 21.5 MSL would generate an increase of 737,000 acre-feet of water to satisfy basic demands. About one half on this additional water supply would be used for a more reliable supply to the Everglades National Park.



PEOPLE

In 1970, approximately 2.7 million people or 40 percent of Florida's population resided in the Basin. This represented a growth of over 900,000 people since 1960 or one-half the increase in Florida's population during this period. Population in the U.S. from 1960 to 1970 increased 13 percent, Florida's by 37 percent while population in the Basin increased by 50 percent. Basin population has more than tripled since 1950. Broward, Dade and Palm Beach counties accounted for over 80 percent of the population growth between 1960 and 1970. The population in these three counties was 97 percent urban in 1970 compared to 66 percent urban for the remaining counties.

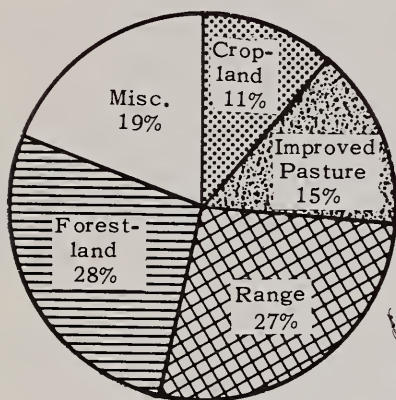
This rapid population increase has occurred because of the growth in employment opportunities and the area's favorable climate and recreational opportunities. Over 8 million tourists visited the Basin in 1968. The civilian labor force increased from about 725,000 in 1963 to over 1.0 million in 1968. Wholesale and retail trade followed by service industries were the two largest employment categories in 1968. Employment in manufacturing increased 46 percent between 1963 and 1968. Average per capita income in 1968 was \$3534 which was higher than the Florida average (\$3191) or the National average (\$3421).

The population in the Basin is projected to reach 3.4 million in 1980 and increase to 6.7 million by 2020. Total civilian employment is expected to be 1.3 million in 1980 and 2.7 million in 2020. All major industries with the exception of agriculture are expected to employ more people in the future. Total personal income is expected to increase from 8.4 billion dollars in 1968 to 63.6 billion dollars in 2020.

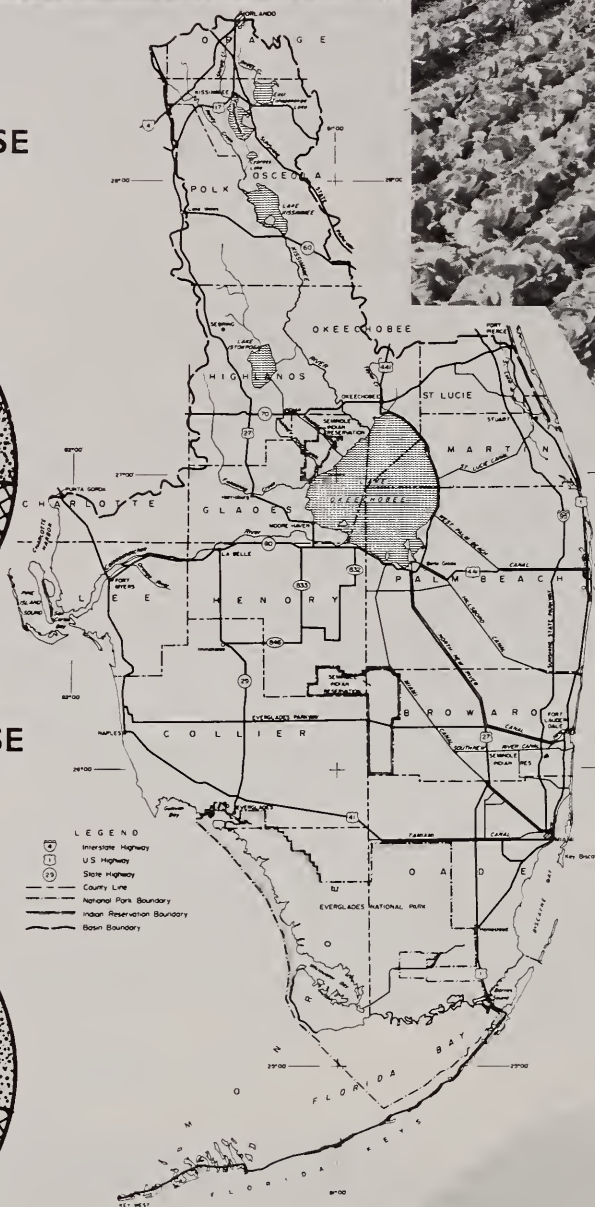
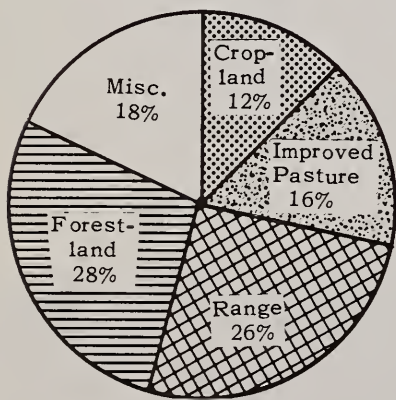
Graphs and tables are included in the report which present county population figures, employment by major sectors of the economy, income by major categories including distribution as well as county per capita income, tourist information by counties and outdoor recreation by major types. Trends are analyzed and projections of population, employment and income for 1980, 2000 and 2020 are shown.



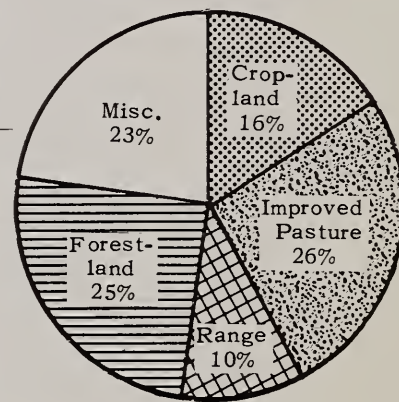
AGRICULTURAL LAND USE 1968 7.23 Million Acres



AGRICULTURAL LAND USE 1980 7.05 Million Acres



AGRICULTURAL LAND USE 2020 5.98 Million Acres



AGRICULTURE

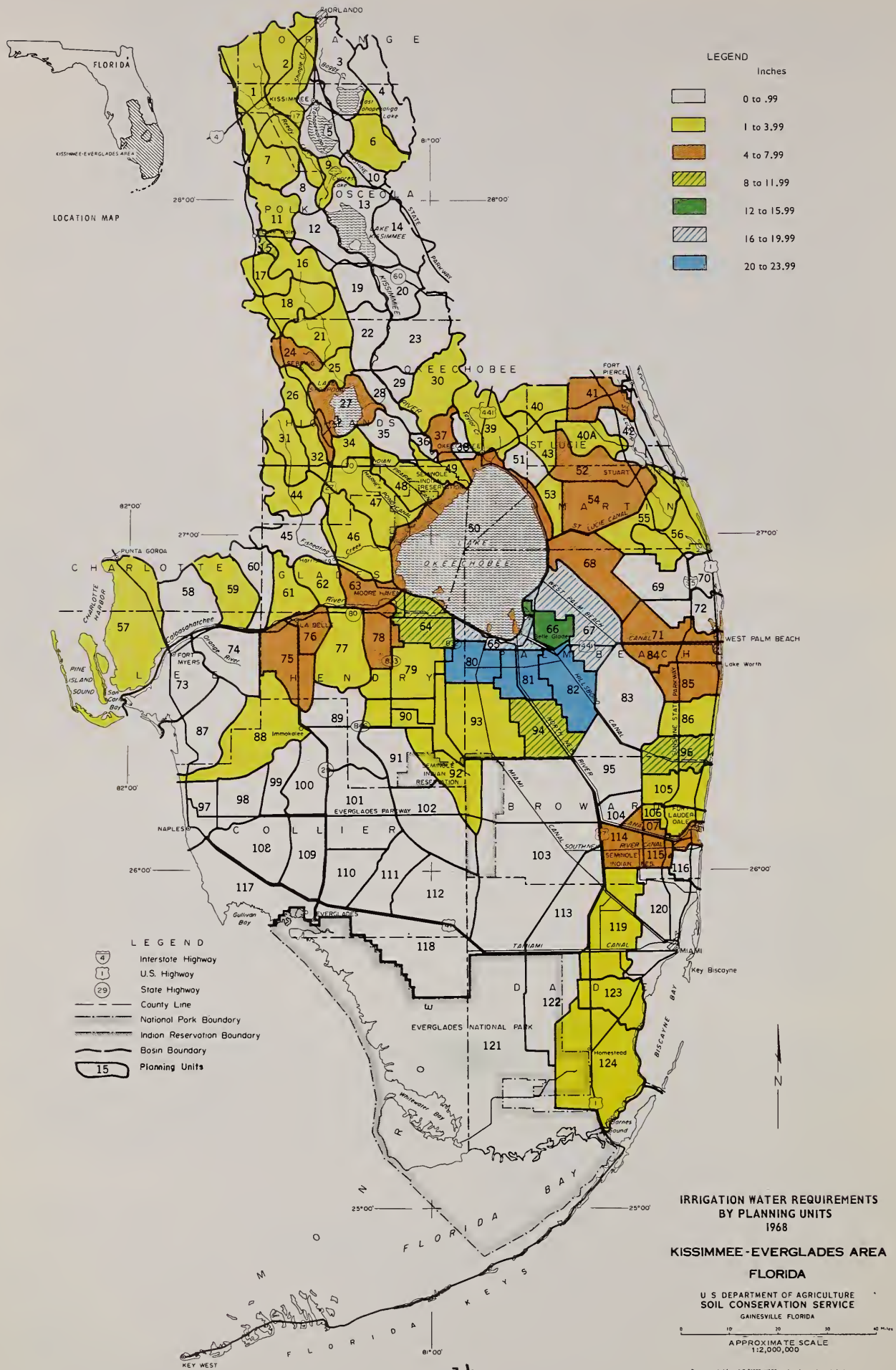
Sales of farm products in the Basin have increased from \$189.0 million in 1954 to \$480.4 million in 1968. Sales of citrus and vegetables represented 58.4 percent of this total. The total retail value of this production was estimated to be \$1.3 billion. There were 5,700 farms in the Basin in 1964, a reduction of about 2,000 during the previous ten years. The average size of farms during this period increased from 660 to 780 acres. Many very large commercial farming operations are located in the Basin. Approximately 52,400 persons were employed full time in farming and forestry in 1968.

Approximately 64 percent of the Basin's 11.3 million acres was used for agricultural purposes in 1968. Cropland represented less than 800,000 acres. Demands for non-agricultural lands are increasing rapidly as present cities are expanding and new retirement communities and subdivisions are being constructed. Palm Beach County was the leading agricultural county in the Basin in terms of gross sales, crop and pasture acreage and water use.

Approximately 36 percent of the State's citrus production, all of the sugarcane and 52 percent of the State's vegetable acreage are located in the Basin. Sales of these commodities represented \$106 million, \$66 million and \$174 million respectively in 1968. Sales of nursery, greenhouse products, and sod represented \$53 million in 1968. Forestry sales in this area represented \$700,000 in sales in 1968. Although Basin sales of livestock products represent about 30 percent of State sales, they are still relatively minor compared to crop sales.

The agricultural sector faces many challenges in the future. These include labor, foreign competition, pollution, muck subsidence, water management problems and competition for land needed for urban expansion. Nevertheless, land used for cropland and improved pasture is expected to increase from 1.9 million acres in 1968 to 2.4 million acres in 2020. The value of all farm sales in terms of adjusted normalized prices is expected to reach \$667.6 million by 1980.

Charts and tables showing county production of major commodities, basin acreage and production and distribution of total farm sales by major commodity groups are included. Land use and water areas by counties are presented. A general appraisal of agricultural conditions and potential problems are discussed. An analysis of trends is made and agricultural production, sales and land use projections for 1980 and 2020 are shown.



WATER RESOURCES OF THE BASIN

Florida is fortunate to have an abundant water supply both from ground water aquifers and from the many lakes and streams of the Basin. There are almost 700,000 acres of fresh water available in the streams and lakes of the Basin. Vast quantities of water are in the underground aquifers but not all of this is of suitable quality. In many areas, salt water intrusion is becoming more of a problem as large amounts of fresh water are withdrawn for various uses. It is important that the recharge areas for these aquifers be protected from development.

Rainfall over the Basin averages approximately 52 inches per year but this is not evenly distributed throughout the year nor is it evenly distributed over the area. Over 60 percent of the total annual rainfall occurs during the four months from June through September. This abundant rainfall is one of the highest found in the United States covering such a large area. The runoff from this rainfall could meet all of the Basin's fresh water needs for the foreseeable future if it were possible to store this water either above or below ground. More research is needed to study the feasibility of pumping fresh water into the aquifer during periods of excess and then withdrawing it during droughts. Storing additional water in the existing lakes as proposed for Lake Okeechobee will also help meet the water requirements of the Basin in future years.

Agriculture is the largest user of fresh water in the Basin and is projected to remain so in the future. Over 70 percent of the fresh water used in the Basin in 1968 was by agricultural irrigation followed by salinity control and dilution, municipal use, and industrial use. The water needs of agriculture are projected to shift from one area to another as farming moves about due to muck subsidence, urban development and many other factors. The USDA is working on the agricultural water requirements of the Basin and has prepared a report covering the present and future agricultural water needs. The Kissimmee-Everglades Report projects the agricultural water requirements to 2020 for 126 planning units within the Basin, and suggests ways to help meet these needs.

The State of Florida through the Department of Natural Resources has inventoried the water used by municipal and industrial users and has projected these demands to 2020. The State is preparing a report showing the combined agricultural, municipal, and industrial water requirements for present and future periods. Knowledge of the total water demand for various areas of the Basin will be helpful in developing plans to meet these needs.



LOCATION MAP

LEGEND

AREAS DOMINATED BY SLOPING SOILS THAT NORMALLY DO NOT HAVE GROUND WATER WITHIN 60 INCHES OF THE SURFACE

- 1 With white sandy surface layers more than 40 inches thick
- 1a With yellow sandy surface layers more than 40 inches thick

AREAS DOMINATED BY NEARLY LEVEL SOILS IN WHICH THE GROUND WATER NORMALLY FLUCTUATES 30 TO 60 INCHES BELOW THE SURFACE

- 2 With sandy surface layers more than 40 inches thick

AREAS DOMINATED BY NEARLY LEVEL SOILS IN WHICH THE GROUND WATER NORMALLY FLUCTUATES 0 TO 30 INCHES BELOW THE SURFACE

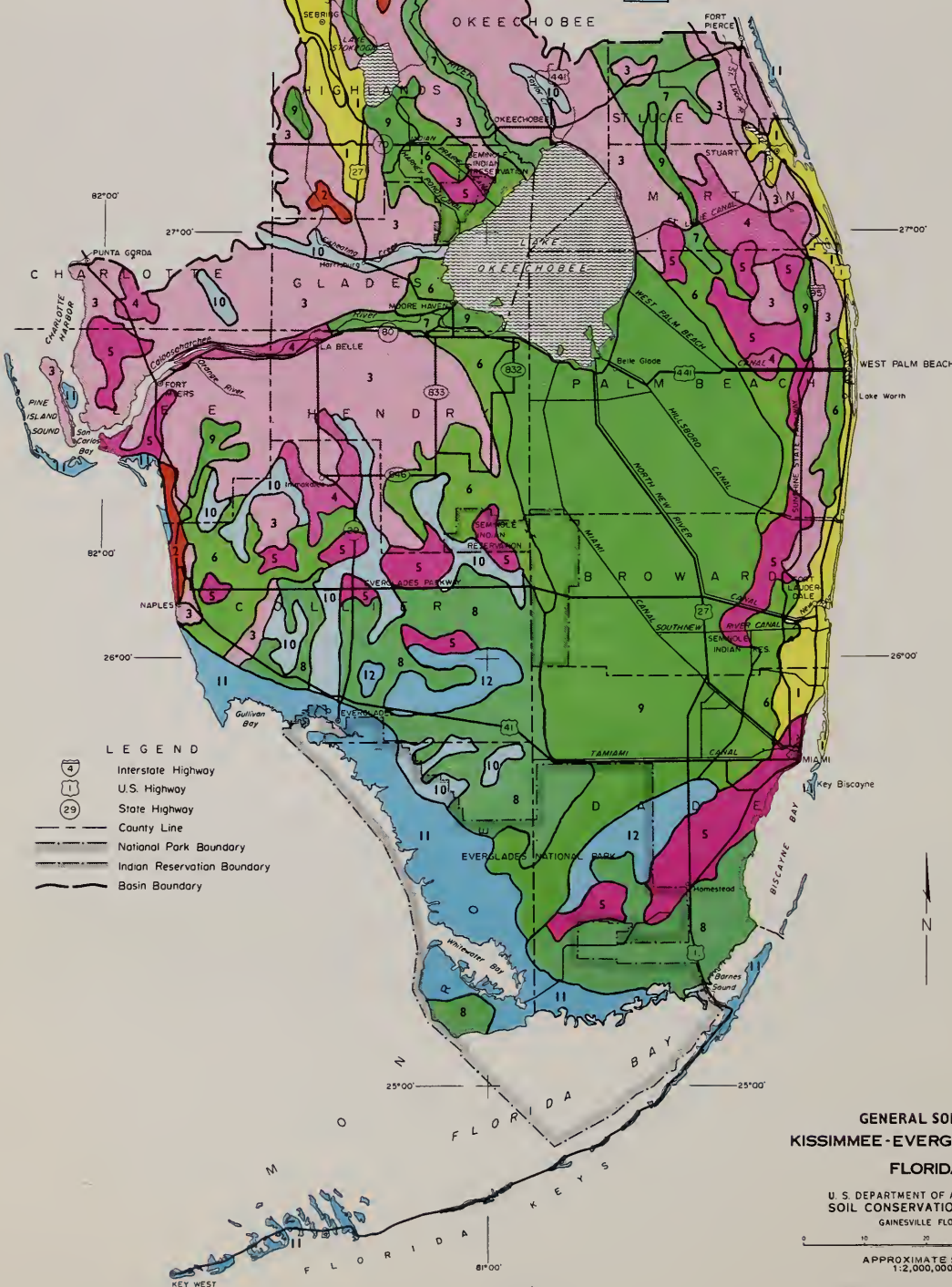
- 3 With sandy surface layers more than 40 inches thick
- 4 With sandy surface layers less than 40 inches thick over loamy subsoils
- 5 With sandy surface layers less than 40 inches thick over marl or limestone

AREAS DOMINATED BY NEARLY LEVEL SOILS IN WHICH THE GROUND WATER NORMALLY IS WITHIN 15 INCHES OF THE SURFACE AND FREQUENTLY RISES ABOVE THE SURFACE

- 6 With sandy surface layers more than 40 inches thick
- 7 With sandy surface layers less than 40 inches thick over loamy subsoils
- 8 With sandy surface layers less than 40 inches thick over marl or limestone
- 9 With organic surface layers

MISCELLANEOUS LAND AREAS

- 10 Fresh water swamps
- 11 Mangrove swamps and keys
- 12 Rockland



- LEGEND
- Interstate Highway
 - U.S. Highway
 - State Highway
 - County Line
 - National Park Boundary
 - Indian Reservation Boundary
 - Basin Boundary

GENERAL SOIL MAP KISSIMMEE-EVERGLADES AREA FLORIDA

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE
GAINESVILLE, FLORIDA

APPROXIMATE SCALE
1:2,000,000

Base compiled from 4-24908, USGS quadrangles, and county highway maps.
All planimetric detail taken from these sources.

May 1971

S-71 4-R-30391
4-R-24908-A

SOILS Agricultural Uses

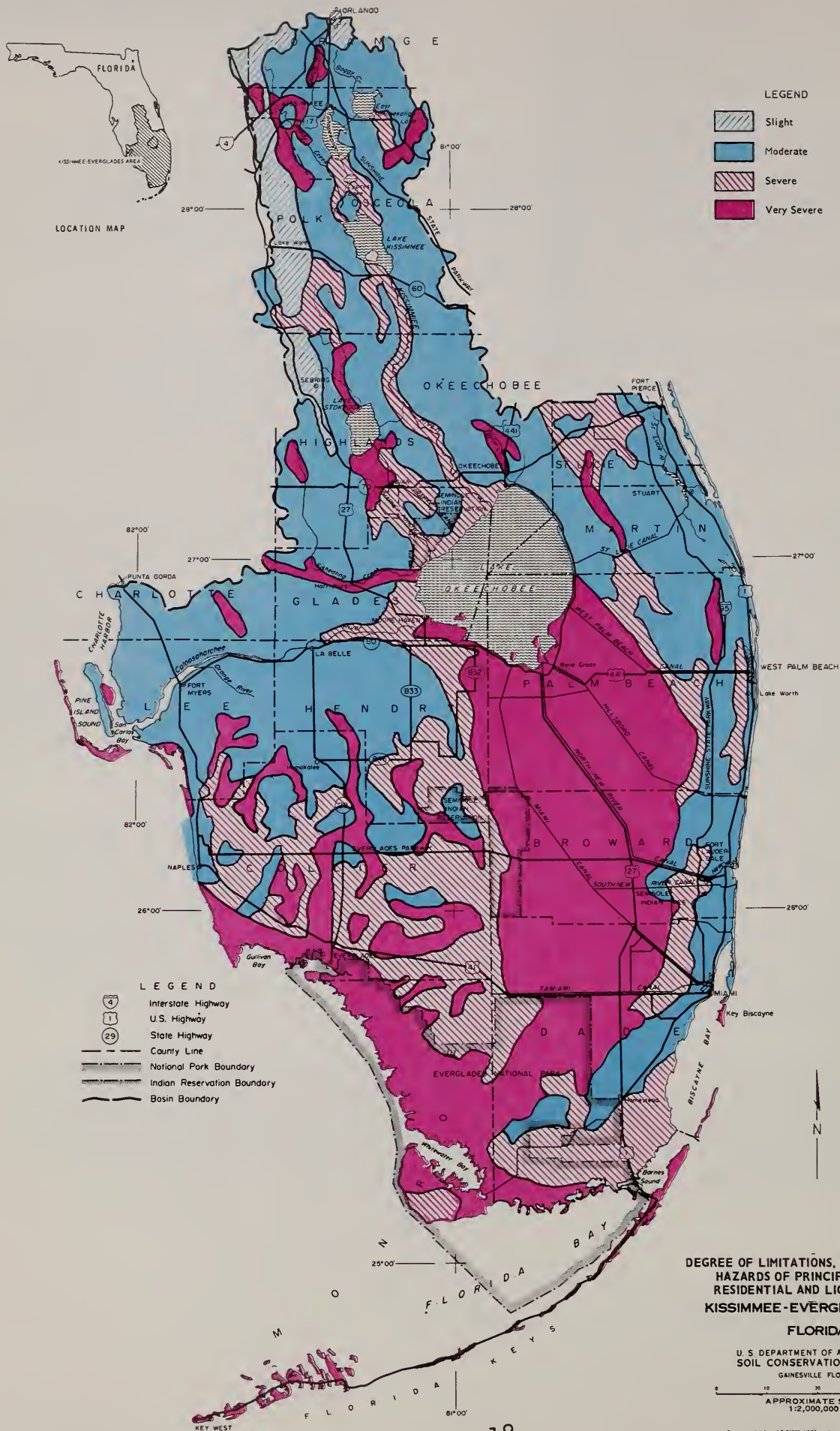
The soils of the Basin range from deep, excessively drained sandy soils on the ridges to very poorly drained mucky soils in the Everglades. Some are shallow sands over limestone; some have loamy or clayey subsoils near the surface. Other soils have sandy horizons extending to great depths. The large majority of the soils in this Basin are strongly affected by ground-water that fluctuates near the surface.

Soil capability classification for agricultural purposes consists of eight classes that deal with limitations or restrictions for agricultural uses and the intensity of conservation treatment needed to overcome them. Soils range from Class I soils that have no important limitations to Class VIII soils with very little agricultural capability. These classes are defined briefly in the USDA Report.

Subclasses are groups of capability units within classes that have the same kinds of dominant limitations for agricultural use. Some soils are subject to erosion if they are not protected, some are naturally wet and must be drained for agricultural use, while others are shallow or droughty, or have other soil deficiencies. The two latter limitations - wetness, designated by the symbol (w) and soil deficiency designated by (s) apply to soils in the Kissimmee-Everglades Area. The "s" or well drained soils are limited mostly to coastal dunes and to the small part of the Florida Ridge extending into the Basin. Approximately 96 percent of the area classified as agricultural in the Basin is "w" soils. In 1968, about 1.74 million acres of crops and improved pastures were being grown on these soils.

Sustained agricultural production on the wet soils requires the installation and maintenance of drainage and water management systems to prevent damage from excess water within the soil profile and above the ground surface. The complexity and depth of the systems are dependent upon the intensity of the crops, flood tolerance, and root zone depth. With proper water management and cultural practices, Basin farmers and ranchers are producing large quantities of citrus, vegetables, sugarcane and livestock for local and national markets.

Soils information in the U.S.D.A. Report includes maps and descriptive narrative of the Major Land Resource Areas and general soils of the Basin. The extent of problems due to soils limitations or hazards is discussed, and graphic illustrations show the amount of agricultural and non-agricultural land, by soil capability subclasses.



SOILS

Non-Agricultural Uses

Interpretations of Soils Information for Non-Agricultural Uses

Interpretations for non-agricultural uses are based on the same physical soil properties significant to agricultural interpretations. Whereas, the physical properties of the soil when used for agriculture are interpreted in terms of capability classes and sub-classes, these same physical properties are interpreted for non-agricultural uses in terms of limitations, restrictions or hazards they impose on the proposed use. In this kind of interpretation, soils are rated according to physical properties they possess that affect their ability to support the weight of buildings, form good roadbeds, absorb septic tank effluent or react to other uses. They are expressed as slight, moderate, severe and very severe as defined below:

Slight: The soil is well adapted for the use and has few if any limitations, restrictions or hazards that would interfere with the proposed use.

Moderate: The soil has serious limitations, restrictions or hazards for the proposed use, but these can be easily corrected.

Severe: The soil has serious limitations, restrictions or hazards for the proposed use, and requires intensive corrective management if it is to be so used.

Very Severe: These soils cannot support the proposed use. The physical nature of the soil must be completely altered or the soil material removed and replaced by more suitable materials.

These interpretations indicate the limitations of the soil for the proposed use and point up the kind and intensity of treatment needed to overcome these shortcomings.

The USDA Main Report of the Kissimmee-Everglades Basin has four maps showing the Degree of Limitations, Restrictions or Hazards of Principal Soils for: Residential and Light Industry; Highways; Graded Roads and Recreation Areas; and Septic Tank and Sanitary Landfill.

Residential and Light Industry - The interpretations of soils for residential and light industry use take into account the soil properties that affect footings and foundations for houses, wetness, available water capacity, fertility, weight bearing ability, the need for and difficulty of land grading, and flood hazard.




Septic Tanks and Sanitary Landfill - Success or failure of septic tanks and sanitary landfill depends primarily on the permeability of surface layers and on freedom of the soil from water saturated layers near the surface.

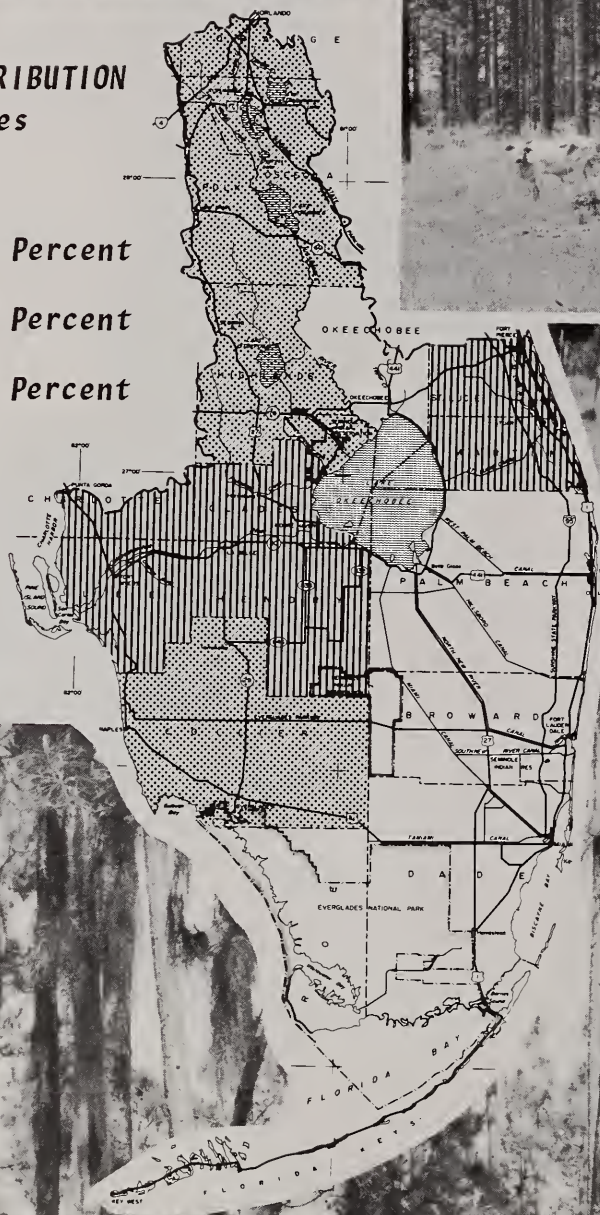
Highways - The interpretations of soils for highway use are considered in terms of the properties they display that affect grading and reworking and are evaluated on soil texture, shrink-swell, slope and depth to rock.

Graded Roads and Recreation Areas - These include farm roads, unpaved streets and unpaved parking areas, camp sites, picnic areas and playgrounds that support light vehicular traffic. Soil trafficability - the ease with which light vehicles can move over the surface of the soil - is the primary consideration for these interpretations. Trafficability is related to soil texture, consistence, compactability and wetness. Flood hazard, slope, erodability and depth to rock are other considerations.



FORESTLAND DISTRIBUTION By Counties

-  0-15 Percent
-  16-35 Percent
-  36-49 Percent



FOREST RESOURCES

The forestland acreage (1,993,400 acres) comprises 19.8 percent of the total land area of the Basin. Though limited in extent, forests are an important resource due to their ability to produce wood products, stabilize soil, furnish a suitable habitat for wildlife and for their importance to outdoor recreation.

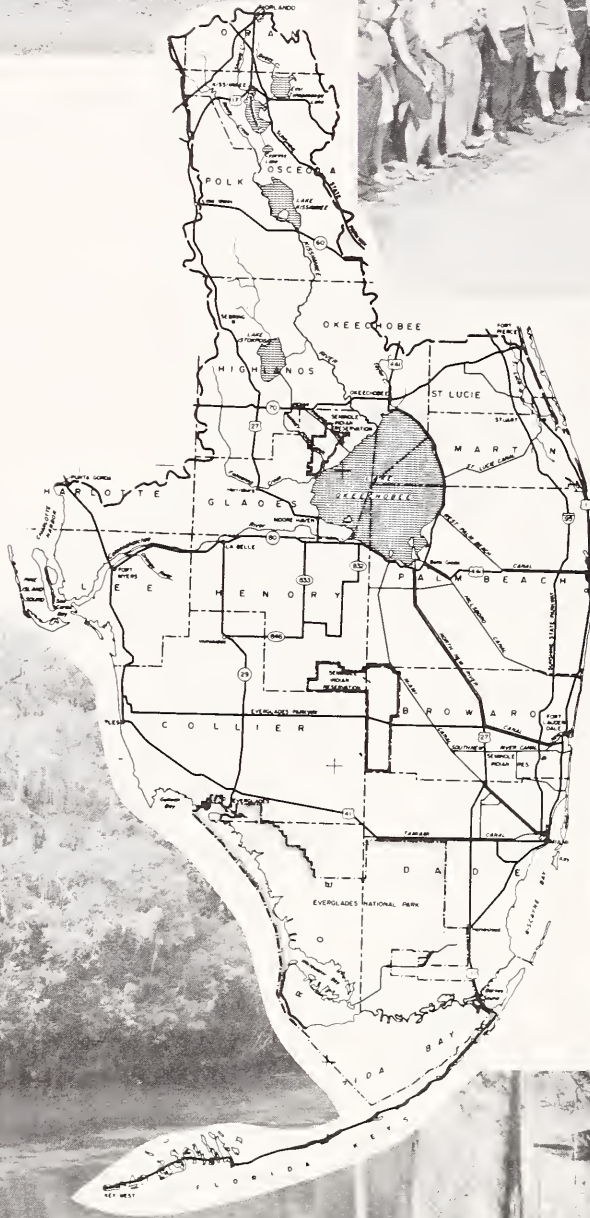
Ninety-one percent of the forestland is privately-owned. Corporations own 49 percent, farmers own 21 percent and 21 percent is in other private ownerships. Nine percent of the forestland is publicly owned. Six percent is in Federal holdings and three percent is in State, County, and Municipal ownerships.

Pulpwood makes up 85 percent of the volume of timber harvested and contributes the most to the economy from the standpoint of forest income and employment. The soils have the potential to grow more timber, and increased production of wood products can be achieved by improving timber stands and planting cut-over areas.

Forestland with rangeland and improved pasture provide a habitat for animals and birds throughout the Basin. In addition, there are four public wildlife management areas. Seventy percent of the forestland is grazed by livestock, supplying approximately 70,000 animal units of forage.

To serve a rapidly increasing urban population, other uses of forestland may become more important than timber production. More forestland may be developed for outdoor recreational purposes or used for wildlife areas. Forestland may be maintained for watershed protection, recharge areas or for enhancement of the environment. More wild areas may be preserved in their present condition for study and research.

Forestry information includes forestry programs, acreages and uses of forestland with employment and income from timber products harvested in 1968. The locations of major forest industries and forest types are shown on maps. Forestland ownership, site class, stocking, volume, and growth are shown on charts. The present and future demands for wood products are indicated and an accelerated forestry program outlined to increase timber production. An alternative forestry program is offered emphasizing the development of forestland for recreation, wildlife, and other uses.



RECREATION

Outdoor recreation, as a general term, embraces many general concepts; and planning for outdoor recreational resources and facilities involves social, educational, and geographical and economic needs and resources. In Florida, the primary responsibility of the State is to provide both areas and facilities for public use.

Florida has become acutely aware of the fact that outdoor recreation is not only a proper but also a vital public responsibility. For the past three decades Florida has been experiencing a rapidly expanding population with all the attending complexities and demands of modern society. Prior to the 1940's, outdoor recreation was no problem. Population was rather sparse and relatively stable, with only the seasonal influx of out-of-state tourists. There was an abundance of recreational opportunities for nearly everyone.

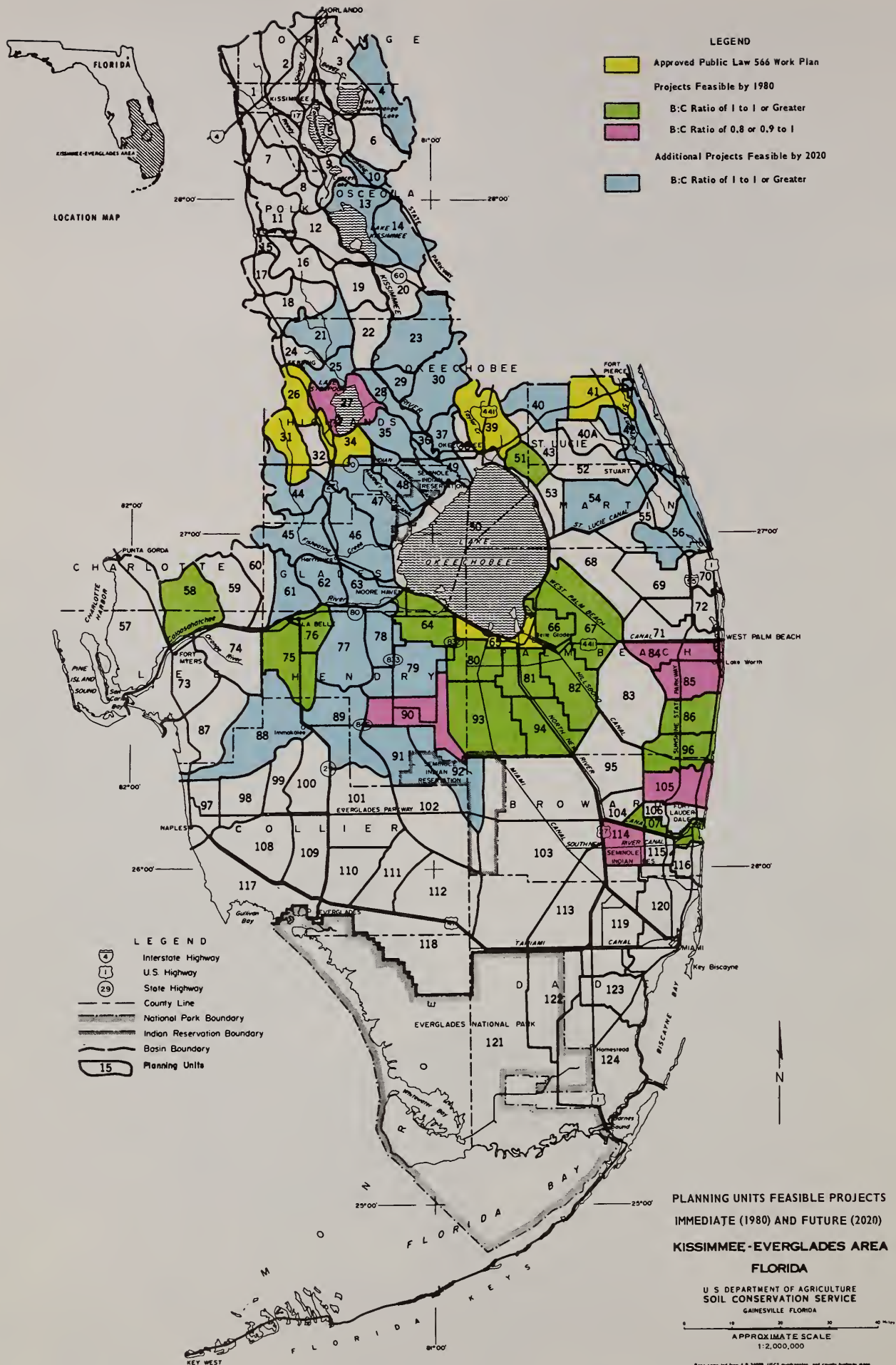
Florida has already made much progress in developing an adequate outdoor recreation^{1/} program. However, with the population increasing about 200,000 every year, the demand for outdoor recreation continues to grow faster than it can properly be supplied. This is particularly true in the Kissimmee-Everglades area, where 40 percent of the state's population resides.

Outdoor recreation is broadly defined as any leisure-time activity conducted outdoors. For purposes of planning, outdoor recreation has been broken down into 15 resource base activities, some of which are beach activities, fishing, both fresh and saltwater, swimming, and natural scenery appreciation.

The importance of outdoor recreation in Florida and the Kissimmee-Everglades Area is measured primarily in two ways. First, and most important, the intangible enjoyment release and the health benefits derived by those participating in outdoor activities. Second is the economic value.

In the Kissimmee-Everglades Area, the economic value is obvious due to the dependence on the tourist industry that is attracted to it by the available outdoor recreational activities.

^{1/} Division of Recreation and Parks, Department of Natural Resources, Outdoor Recreation in Florida, August 1971. (A Comprehensive Program for meeting Florida's outdoor recreation needs).



Public Law 566, the Watershed Protection and Flood Prevention Act, provides technical and financial assistance to state or local organizations in planning, designing and installing watershed improvement works. It provides cost sharing for flood prevention, agricultural water management (drainage and irrigation), enhancement, protection and development for fish and wildlife resources and public recreation.

The Soil Conservation Service administers the PL-566 program from the application stage to the completion of construction when the completed projects are accepted by the local sponsors for operation and maintenance.

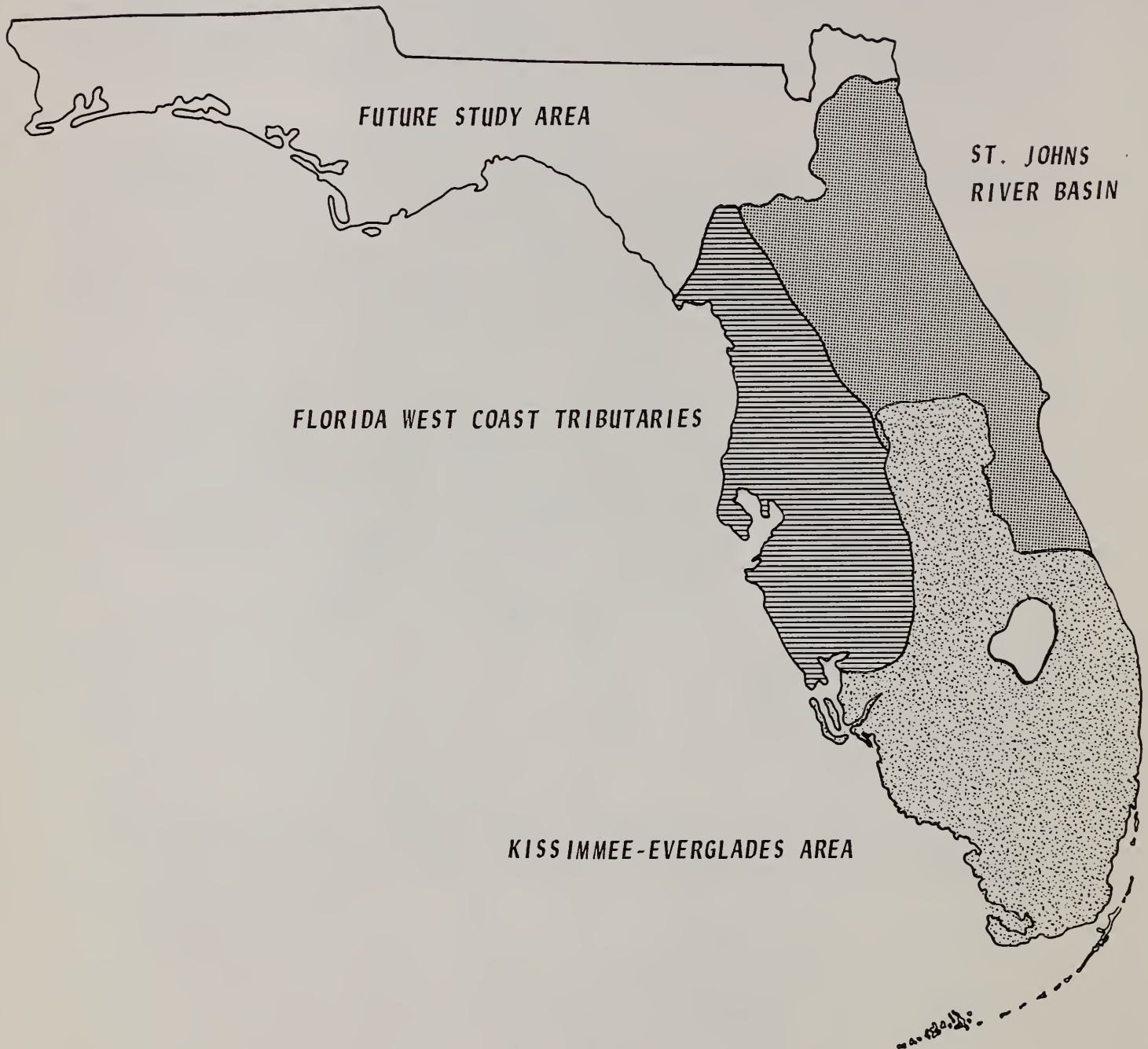
There are 15 active PL-566 projects in the Basin covering 478,000 acres. Four projects are completed with two more in their final contracts (1972). The remaining nine projects are in varying stages ranging from initial planning to construction plans.

The Basin was divided into 126 planning units. Each unit was evaluated to determine the technical and economic feasibility of providing works of improvement for the purpose of flood prevention and agricultural water management. The economic evaluation for 1980 indicated that 15 planning units will have favorable benefit-to-cost ratios of 1:1 or better. Six units will be marginal with ratios of 0.8 to 1 or higher and 97 units were found to be infeasible.

The proposals for agricultural development to help meet 2020 national production requirements were evaluated on the basis that works of improvements would be designed and installed to give the desired protection for the projected use of the soil resources. The evaluation indicated that 33 additional planning units which were infeasible or marginal in 1980 would have favorable benefit-to-cost ratios of 1:1 or better by 2020.

It is not considered feasible to provide facilities that will eliminate all flooding, but rather to remove the floodwaters within a period of time compatible with the tolerance of the crops being grown.

FLORIDA LAND AND WATER RESOURCES
FLORIDA RIVER BASIN STUDIES



Florida Department of Natural Resources
U. S. Department of Agriculture
River Basins Investigations

FLORIDA LAND AND WATER RESOURCES

Completed Florida River Basin Studies

1. Florida West Coast Tributaries - Published 1965

Base Year 1963, projections to 1980 - 2015

The Florida West Coast Tributaries covers an area of 10,080 square miles of land and water. There are 670 square miles of streams, lakes and impoundments in fresh or brackish water. Agricultural and forestry enterprises occupy 8,400 square miles of land. The Basin's population in 1963 was estimated to be 1.4 million people.

2. St. Johns River Basin and Intervening Coastal Areas - Published 1970

Base Year 1965, projections to 1980 - 2000 - 2020

The St. Johns River Basin and Intervening Coastal Areas includes an area of 11,431 square miles of land and water. There are 432 square miles of fresh water streams and lakes and 653 square miles of salt or brackish water streams and estuaries. The agricultural and forestry enterprises occupy 9,228 square miles of land. The Basin's population in 1965 was estimated to be 1.5 million people.

3. Kissimmee-Everglades Area - Currently being published (1972)

Base Year 1968, projections to 1980 - 2000 - 2020

This Basin includes an area of 17,664 square miles of land and water. There are 1076 square miles of fresh water streams and lakes and 886 square miles of salt or brackish water streams and estuaries. Agricultural and forestry enterprise occupy 11,306 square miles of land in the Basin. Population in the Basin in 1970 totaled 2.8 million.

Future Florida River Basin Studies

Northwest Florida and Suwannee-St. Marys River Basin Area. Base Year 1972, proposed projections to 1990 and 2020.

This study contains all of the remaining land of Florida not previously covered in a river basin report. The area in Florida has approximately 19,400 square miles. It is estimated that 80 to 85 percent of this study area will be in timber production with about one-half of the area in large paper company holdings. Consideration is being given to studying the watershed areas of the rivers that flow out of Georgia and Alabama into the Florida Study Area. This would add about 11,300 square miles from Alabama and approximately 7,800 square miles from Georgia. These additional areas of Georgia and Alabama would make a total study area of about 38,500 square miles or about 25 million acres in 77 counties. It is estimated that it will take six years to complete the study. Consideration is being given to making interim reports to each state on the inventory (Phase I) of the study with a complete final report, including project proposals, coming in Phase II at the completion of the study.

